

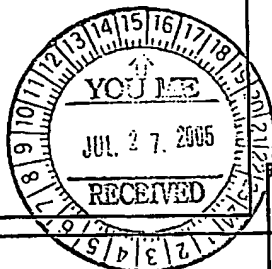
## PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

YOUME PATENT AND LAW FIRM  
Teheran Bldg., 825-33  
Yoksam-dong, Kangnam-ku  
135-080 Seoul  
Republic of Korea



NOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Rule 71.1)

Date of mailing  
(day/month/year) 20 July 2005 (20.07.2005)

Applicant's or agent's file reference

OPP021539KR

IMPORTANT NOTIFICATION

International application No.

PCT/KR 2002/002499

International filing date (day/month/year)

30 December 2002 (30.12.2002)

Priority Date (day/month/year)

20 December 2002 (20.12.2002)

Applicant

ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**  
The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).  
  
Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.  
  
For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.  
  
The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>OPP021539KR</b>		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/KR 2002/002499</b>	International filing date (day/month/year) <b>30 December 2002 (30.12.2002)</b>	Priority Date (day/month/year) <b>20 December 2002 (20.12.2002)</b>	
International Patent Classification (IPC) or national classification and IPC <b>IPC<sup>7</sup>: H04L 12/56, H04L 29/06</b>			
Applicant <b>ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE</b>			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I. <input checked="" type="checkbox"/> Basis of the opinion</li> <li>II. <input type="checkbox"/> Priority</li> <li>III. <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV. <input type="checkbox"/> Lack of unity of invention</li> <li>V. <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI. <input type="checkbox"/> Certain documents cited</li> <li>VII. <input type="checkbox"/> Certain defects in the international application</li> <li>VIII. <input type="checkbox"/> Certain observations on the international application</li> </ul>			
Date of submission of the demand <b>08.06.2004</b>		Date of completion of this report <b>11 July 2005 (11.07.2005)</b>	
Name and mailing address of the IPEA/AT Austrian Patent Office Dresdner Straße 87 A-1200 Vienna Facsimile No. 1/53424/200		Authorized officer  <b>MESA PASCASIO J.</b>  Telephone No. 1/53424/327	

Form PCT/IPEA/409 (cover sheet) (July 1998)

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR 2002/002499

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

☒ the international application as originally filed☐ the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☐ the claims:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, as amended (together with any statement) under Article 19

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☐ the drawings:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages \_\_\_\_\_.☐ the claims, Nos. \_\_\_\_\_.☐ the drawings, sheets/fig \_\_\_\_\_.5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed“ and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

Form PCT/IP/EA/409 (Box I) (July 1998))

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/KR 2002/002499

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement			
Novelty (N)	Claims 1-7		YES
	Claims ----		NO
Inventive step (IS)	Claims 1-7		YES
	Claims ----		NO
Industrial applicability (IA)	Claims 1-7		YES
	Claims ----		NO

### Citations and explanations (Rule 70.7)

Documents cited in the Search Report established by the Korean Intellectual Property Office:

D1: US 6 233 458 B1  
D2: US 5 970 059 A  
D3: US 6 389 008 B1  
D4: US 6 487 406 B1

Document D1 provides a mobile station (MS) using a base station (BTS11) which belongs to a routing area and the MS sends an Internet protocol (IP) packet to the host via the general packet radio service (GPRS) network. The IP packet is first encapsulated in a subnetwork dependent convergence protocol (SND CP) packet and then in a logical link control (LLC) frame containing the temporary logical link identifier (TLLI) identifying the link between the serving GPRS support node (SGSN) and the MS unambiguously within the routing area. The network layer service access point identity (NSAPI) identifies which specifies the protocol uses. The LLC frame is then sent to BTS11.

Document D2 relates to a protocol-independent routing of data packets between a mobile station of a packet radio network and a party (Host) connected to an external network. A data packet of an extraneous protocol (IPX) is transferred through a packet radio network using a second protocol as encapsulated in a data packet according to the second protocol. The transferring packet radio network does not thus need to understand the protocol of the transferred extraneous data packet or to be able to interpret the content of the data packet. A data packet network is connected to other packet radio networks, data networks or the backbone network between packet data networks via a gateway node (GPRS GSN), which uses the network-internal protocol towards the dedicated packet network and the protocol of each network towards other networks. When a data packet is transferred via a gateway node from a network into another network, the data packet is encapsulated in a packet according to the protocol of the new network. When the encapsulated data packet arrives in a node which supports the protocol of the

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/KR 02/02499**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V (page 1)

encapsulated data packet, the encapsulation is stripped away and the data packet is routed forward according to the protocol of the data packet.

Document D3 provides an integrated radio telecommunications network which integrates an ANSI-41 circuit switched network and a General Packet Radio Service (GPRS) packet data network to support a mobile station. It operates in both the ANSI-41 network and the GPRS network. An interworking function interfaces a mobile switching center (MSC) in the ANSI-41 network with a serving GPRS switching node (SGSN) in the GPRS network by mapping circuit switched signalling utilized by the MSC into GPRS packet switched signalling utilized by the SGSN, and mapping GPRS packet switched signalling into circuit switched signalling. An interworking GPRS base station controller interfaces the SGSN with a GPRS/ANSI-136 base station which supports both ANSI-136 operations and GPRS operations. The interworking GPRS base station controller adapts the traffic signalling format utilized by the SGSN into an air interface traffic signalling format utilized by the GPRS/ANSI-136 base station. An authentication center interface passes the authentication state of the mobile station between an ANSI-41 home location register/authentication center (HLR/AC) in the ANSI-41 network, and a GPRS home location register/authentication center (HLR/AUC) in the GPRS network.

Document D4 provides a method and system for providing seamless mobile IP connectivity between mobile stations (MS) connected to a PCS network via base stations (BS) connected to base station switching centers (BSCs). The BSCs are connected to a mobile station switching station (MSC) and are configured to direct voice traffic from the MS to the MSC. A gateway router (GR) is connected between the BSCs and the Internet and each BSC is configured as an IP data node. One or more subnets are defined, each of which includes at least one BSC. Each MS is assigned a permanent IP address and associated with a home subnet. When the system detects that the MS is connected to a BSC outside of its home subnet, it is assigned a care-of address to the MS to which IP data can be forwarded. IP data from the MS is routed through the GR. IP data directed to the MS is directed to the MS's permanent IP address. If the MS is connected to a BSC outside of its home subnet, the data traffic is forwarded to the MS's care-of address. A mobile station and base station controller for use in such a network is also presented.

The present application provides a protocol embodying system and method in the GGSN including a GPRS (general packet radio service) network which includes protocols of first and second network layers, and respective protocols of a transfer layer and the GPRS tunnelling, and converts user data into IP packets and IP packets into user data. A PDN (public data network) which is connected to the GPRS network uses the protocols of the first and second layers to transmit the IP packets to the outside or the GPRS network, comprises of an IP layer, provided between the GPRS network and the PDN, for performing routing between the two networks, and performing routing between the protocols of the first and second network layers and the transfer layer protocol on the GPRS network, and a virtual driver provided on the lower part of the IP layer, connected to the protocol of the GPRS tunnelling provided to the upper part of the IP layer on the GPRS network, and operable as the lower interface of the IP layer.

The present application provides thus encapsulation of protocols similar to such features as can be found in D1 and D2, respectively. However, the present application provides a

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**International application No.  
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(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: **Box V (page 2)**

virtual driver settled on the lower part of the IP layer which allows to transmit the IP packet to a GPRS tunnelling protocol of the GPRS network. Furthermore, the step of allowing the virtual driver to transmit the IP packet to the IP through a virtual driver, and allowing the IP to transmit the IP packet to a corresponding node on the PDN comprises performing a reporting process with the IP in advance so that the virtual driver may process dynamic and static addresses of mobile stations belonging to the GGSN. These features cannot be found in any of the cited documents nor in any combination of documents D1 to D4.

Accordingly, all claims 1 to 7 are considered to be new and inventive.

Industrial applicability is given.